terminal units 1, 2 ... n accordingly.

Taken together, the sequence in which transmissions are prioritized and authorized make up a schedule. By so scheduling transmissions, interference with a given transmission is reduced.

It should be understood that the signals S_{A1}, S_{A2} ... S_N, S_{R1}, S_{R2} ... S_{Rn} and/or S_{T1}, S_{T2} ... S_{Tn} may be combined into a single signal or further broken down into further signals using means known in the art. This is because the exact number of signals used is not important; only the channel quality between the device 10 and terminal units 1, 2 .... n is important to realizing the present invention.

Though the description above has focused on devices, the present invention also envisions methods for scheduling transmissions in interference-limited networks that take into account the interdependence between scheduling and interference.

It is to be understood that changes and variations may be made without departing from the spirit and scope of this invention as defined by the claims that follow.

We Claim:

1. A device for scheduling transmissions in an interference-limited network, wherein the device is adapted to prioritize transmission request signals based on achievable data rates.

2. The device as in claim 1 wherein the device is further adapted to assign a highest priority to a transmission request signal associated with a highest achievable data rate.

3. The device as in claim 2 wherein the device is further adapted to authorize a terminal unit associated with the highest achievable data rate to send a transmission.

4. The device as in claim 1 wherein the device is further adapted to authorize a terminal unit associated with a prioritized transmission request signal to send a transmission.

5. The device as in claim 1 wherein the device comprises a bandwidth allocation unit.

6. The device as in claim 1 wherein the device comprises a multiplexer.

7. The device as in claim 1, wherein the device is further adapted to periodically poll a data rate associated with a terminal unit within the network.

8. The device as in claim 7 wherein the device is further adapted to adjust a priority associated with the terminal unit based on the polled data rate.

9. The device as in claim 1 wherein the device is further adapted to prioritize transmission test signals based on achievable data rates.

10. The device as in claim 9 wherein the device is further adapted to assign a highest priority to a transmission test signal associated with a highest achievable data rate.

11. The device as in claim 10 wherein the device is further adapted to authorize a transmission to a terminal unit associated with the highest achievable data rate.

12. The device as in claim 9 wherein the device is further adapted to authorize a transmission to a terminal unit associated with a prioritized transmission test signal.

13. A device for scheduling transmissions in an interference-limited network, wherein the device is adapted to prioritize transmission test signals based on achievable data rates.

14. The device as in claim 13, wherein the device is further adapted to assign a highest priority to a transmission test signal associated with a highest achievable data rate.

15. The device as in claim 14 wherein the device is further adapted to authorize a transmission to a terminal unit associated with the highest achievable data rate.

16. The device as in claim 13 wherein the device is further adapted to authorize a transmission to a terminal unit associated with a prioritized transmission test signal.

17. The device as in claim 13 wherein the device comprises a bandwidth allocation unit.

18. The device as in claim 13 wherein the device comprises a multiplexer.

19. A method for scheduling transmissions in an interference-limited network comprising:

prioritizing transmission request signals based on achievable data rates.

20. The method as in claim 19 further comprising assigning a highest priority to a transmission request signal associated with a highest achievable data rate.

21. The method as in claim 20 further comprising authorizing a terminal unit associated with the highest achievable data rate to send a transmission.

22. The method as in claim 19 further comprising authorizing a terminal unit associated with a prioritized transmission request signal to send a transmission.

23. The method as in claim 19 further comprising periodically polling a data rate associated with a terminal unit within the network.

24. The method as in claim 23 further comprising adjusting a priority associated with the terminal unit based on the polled data rate.

25. The method as in claim 19 further comprising prioritizing transmission test signals based on achievable data rates.

26. The method as in claim 25 further comprising assigning a highest priority to a transmission test signal associated with a highest achievable data rate.

27. The method as in claim 26 further comprising authorizing a transmission to a terminal unit associated with the highest achievable data rate.

28. The method as in claim 25 further comprising authorizing a transmission to a terminal unit associated with a prioritized transmission test signal.

29. A method for scheduling transmissions in an interference-limited network comprising:

prioritizing transmission test signals based on achievable data rates.

30. The method as in claim 29 further comprising assigning a highest priority to a transmission test signal associated with a highest achievable data rate.

31. The method as in claim 30 further comprising authorizing a transmission to a terminal unit associated with the highest achievable data rate.

32. The method as in claim 29 further comprising authorizing a transmission to a terminal unit associated with a prioritized transmission test signal.